

CLAIMS

What is claimed is:

- 1 1. An apparatus comprising:
2 a receiver to receive a default stream and N restart sub-streams from a
3 transmitter over a transmission path, N being an integer equal to at least 1 and selected
4 according to a selection, the default stream being coded by a multiple description (MD)
5 coding, the N restart sub-streams being coded by a predictive coding and sampled
6 according to a sampling pattern, the default and N restart sub-streams corresponding to
7 a media content; and
8 a selector coupled to the receiver to select a receiving frame from the default
9 stream and one of the N restart sub-streams according to a loss status in the default
10 stream.
- 1 2. The apparatus of claim 1 further comprising:
2 a decoder to decode the receiving frame.
- 1 3. The apparatus of claim 1 wherein the selector selects the receiving frame
2 from the one of the N restart sub-streams when the loss status indicates there is a lost
3 frame in the default stream.
- 1 4. The apparatus of claim 3 wherein the selector selects the receiving frame
2 from one of the N restart sub-streams, the selected receiving frame being nearest to the
3 lost frame and belonging to same description as the lost frame.
- 1 5. The apparatus of claim 4 wherein the selector selects the default stream
2 when the loss status indicates there is no lost frame in the default stream.
- 1 6. The apparatus of claim 4 wherein the selector selects the default stream
2 after the receiving frame from the one of the N restart sub-stream is selected.
- 1 7. The apparatus of claim 1 wherein the selection is based on at least one of
2 bandwidth and loss rate of the transmission path.

1 8. The apparatus of claim 1 wherein the sampling pattern is a non-
2 overlapping pattern or having frames from each description of the MD coding.

1 9. The apparatus of claim 1 wherein at least one of the default stream and
2 the N restart sub-streams corresponds to a layered representation of the frames
3 according to an encoding rate.

1 10. An apparatus comprising:
2 a transmitter to transmit a default stream and N restart sub-streams to a plurality
3 of receivers over a plurality of transmission paths, N being an integer equal to at least 1
4 and selected according to a selection at the receivers, the default stream being coded by
5 a multiple description (MD) coding, the N restart sub-streams being coded by a
6 predictive coding and sampled according to a sampling pattern, the default and N
7 restart sub-streams corresponding to a media content.

1 11. The apparatus of claim 10 wherein at least one of the default stream and
2 the N restart sub-streams corresponds to a layered representation of the frames
3 according to an encoding rate.

1 12. A method comprising:
2 receiving a default stream and N restart sub-streams from a transmitter over a
3 transmission path, N being an integer equal to at least 1 and selected according to a
4 selection, the default stream being coded by a multiple description (MD) coding, the N
5 restart sub-streams being coded by a predictive coding and sampled according to a
6 sampling pattern, the default and N restart sub-streams corresponding to a media
7 content; and
8 selecting a receiving frame from the default stream and one of the N restart sub-
9 streams according to a loss status in the default stream.

1 13. The method of claim 12 further comprising:
2 decoding the receiving frame.

1 14. The method of claim 12 wherein selecting comprises selecting the one
2 of the N restart sub-streams when the loss status indicates there is a lost frame in the
3 default stream.

1 15. The method of claim 14 wherein selecting comprises selecting the
2 receiving frame from one of the N restart sub-streams, the selected receiving frame
3 being the nearest to the lost frame and belonging to same description of the lost frame.

1 16. The method of claim 15 wherein selecting comprises selecting the
2 default stream when the loss status indicates there is no lost frame in the default stream.

1 17. The method of claim 15 wherein selecting comprises selecting the
2 default stream after the receiving frame from the one of the N restart sub-streams is
3 selected.

1 18. The method of claim 12 wherein the selection is based on at least one of
2 bandwidth and loss rate of the transmission path.

1 19. The method of claim 12 wherein the sampling pattern is a non-
2 overlapping pattern or having frames from each description of the MD coding.

1 20. The method of claim 12 wherein at least one of the default stream and
2 the N restart sub-streams corresponds to a layered representation of the frames.

1 21. A method comprising:
2 transmitting a default stream and N restart sub-streams to a plurality of receivers
3 over a plurality of transmission paths, N being an integer equal to at least 1 and selected
4 according to a selection at the receivers, the default stream being coded by a multiple
5 description (MD) coding, the N restart sub-streams being coded by a predictive coding
6 and sampled according to a sampling pattern, the default and N restart sub-streams
7 corresponding to a media content.

1 22. The method of claim 21 wherein at least one of the default stream and
2 the N restart sub-streams corresponds to a layered representation of the frames
3 according to an encoding rate.

1 23. An article of manufacture comprising:
2 a machine-accessible medium including data that, when accessed by a machine,
3 causes the machine to perform operations comprising:

4 receiving a default stream and N restart sub-streams from a transmitter over a
5 transmission path, N being an integer equal to at least 1 and selected according to a
6 selection, the default stream being coded by a multiple description (MD) coding, the N
7 restart sub-streams being coded by a predictive coding and sampled according to a
8 sampling pattern, the default and N restart sub-streams corresponding to a media
9 content; and
10 selecting a receiving frame from the default stream and one of the N restart sub-
11 streams according to a loss status in the default stream.

1 24. The article of manufacture of claim 23 further comprising data that
2 cause the machine to perform operations comprising:
3 decoding the receiving frame.

1 25. The article of manufacture of claim 23 wherein the data causing the
2 machine to perform selecting comprises data that cause the machine to perform
3 operations comprising selecting the receiving frame from the one of the N restart sub-
4 streams when the loss status indicates there is a lost frame in the default stream.

1 26. The article of manufacture of claim 25 wherein the data causing the
2 machine to perform selecting comprises data that cause the machine to perform
3 operations comprising selecting the receiving frame, the selected receiving frame being
4 nearest to the lost frame and belonging to same description as the lost frame.

1 27. The article of manufacture of claim 26 wherein the data causing the
2 machine to perform selecting comprises data that cause the machine to perform
3 operations comprising selecting the default stream when the loss status indicates there
4 is no lost frame in the default stream.

1 28. The article of manufacture of claim 26 wherein the data causing the
2 machine to perform selecting comprises data that cause the machine to perform
3 operations comprising selecting the default stream after the receiving frame from the
4 one of the N restart frames is selected.

1 29. The article of manufacture of claim 23 wherein the selection is based on
2 at least one of bandwidth and loss rate of the transmission path.

1 30. The article of manufacture of claim 23 wherein the sampling pattern is a
2 non-overlapping pattern or having frames from each description of the MD coding.

1 31. The article of manufacture of claim 23 wherein at least one of the
2 default stream and the N restart sub-streams corresponds to a layered representation of
3 the frames.

1 32. An article of manufacture comprising:
2 a machine-accessible medium including data that, when accessed by a machine,
3 causes the machine to perform operations comprising:
4 transmitting a default stream and N restart sub-streams to a plurality of receivers
5 over a plurality of transmission paths, N being an integer equal to at least 1 and selected
6 according to a selection at the receivers, the default stream being coded by a multiple
7 description (MD) coding, the N restart sub-streams being coded by a predictive coding
8 and sampled according to a sampling pattern, the default and N restart sub-streams
9 corresponding to a media content.

1 33. The article of manufacture of claim 21 wherein at least one of the
2 default stream and the N restart sub-streams corresponds to a layered representation of
3 the frames according to an encoding rate.

1 34. An apparatus comprising:
2 means for receiving a default stream and N restart sub-streams from a
3 transmitter over a transmission path, N being an integer equal to at least 1 and selected
4 according to a selection, the default stream being coded by a multiple description (MD)
5 coding, the N restart sub-streams being coded by a predictive coding and sampled
6 according to a sampling pattern, the default and N restart sub-streams corresponding to
7 a media content; and
8 means for selecting a receiving frame from the default stream and one of the N
9 restart sub-streams according to a loss status in the default stream.

1 35. The apparatus of claim 34 further comprising:
2 means for decoding the receiving frame.

3 36. The apparatus of claim 34 wherein the means for selecting selects the
4 receiving frame from the one of the N restart sub-streams when the loss status indicates
5 there is a lost frame in the default stream.

1 37. The apparatus of claim 36 wherein the means for selecting selects the
2 receiving frame, the selected receiving frame being nearest to the lost frame and
3 belonging to same description as the lost frame.

1 38. The apparatus of claim 37 wherein the means for selecting selects the
2 default stream when the loss status indicates there is no lost frame in the default stream.

1 39. An apparatus comprising:
2 means for transmitting a default stream and N restart sub-streams to a plurality
3 of receivers over a plurality of transmission paths, N being an integer equal to at least 1
4 and selected according to a selection at the receivers, the default stream being coded by
5 a multiple description (MD) coding, the N restart sub-streams being coded by a
6 predictive coding and sampled according to a sampling pattern, the default and N
7 restart sub-streams corresponding to a media content.

1 40. The apparatus of claim 39 wherein at least one of the default stream and
2 the N restart sub-streams corresponds to a layered representation of the frames
3 according to an encoding rate.